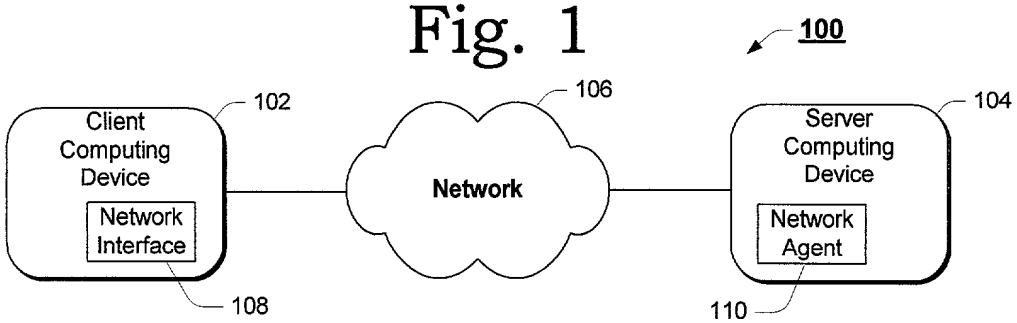
Fig. 1


100
Client Computing Device
102
Network Interface
108
Network
106
Server Computing Device
104
Network Agent
110

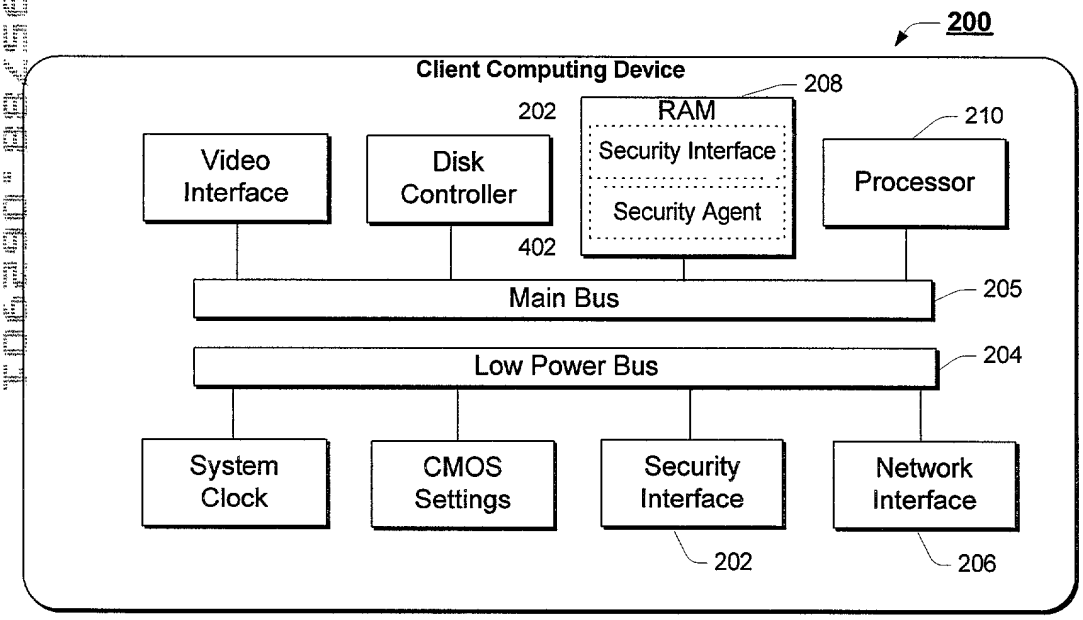

200
Client Computing Device
202
Video Interface
Disk Controller
402
RAM
208
Security Interface
Security Agent
210
Processor
Main Bus
205
Low Power Bus
204
System Clock
CMOS Settings
Security Interface
202
Network Interface
206

Fig. 2

Fig. 3

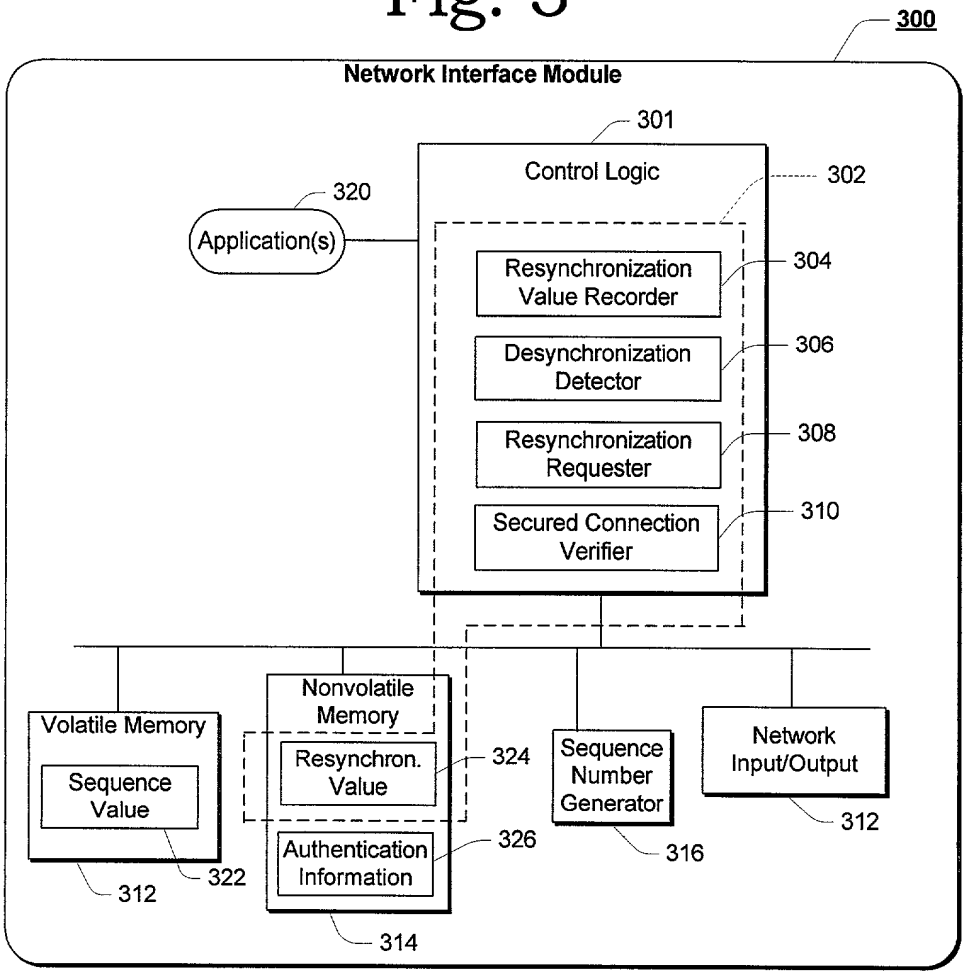

300
Network Interface Module
301
Control Logic
302
320
Application(s)
Resynchronization Value Recorder
304
Desynchronization Detector
306
Resynchronization Requester
308
Secured Connection Verifier
310
Volatile Memory
Sequence Value
322
312
Nonvolatile Memory
Resynchron. Value
324
Authentication Information
326
314
Sequence Number Generator
316
Network Input/Output
312

Fig. 4

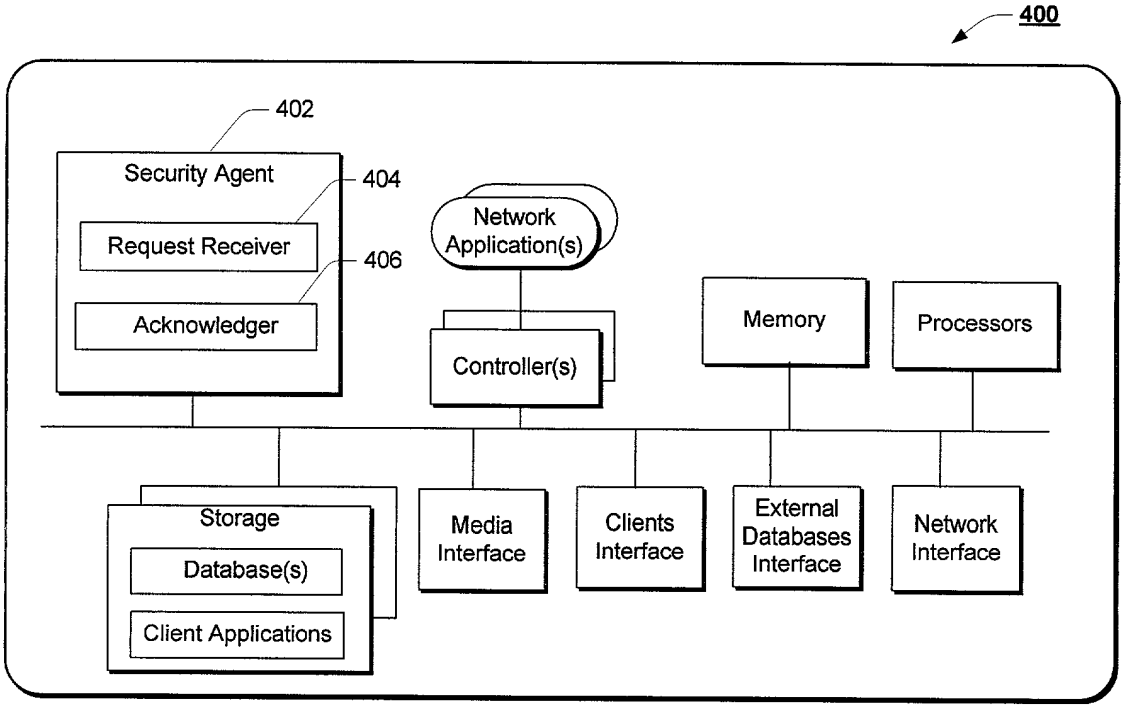

400
402
Security Agent
404
Request Receiver
406
Acknowledger
Network Application(s)
Controller(s)
Memory
Processors
Storage
Database(s)
Client Applications
Media Interface
Clients Interface
External Databases Interface
Network Interface

Fig. 5

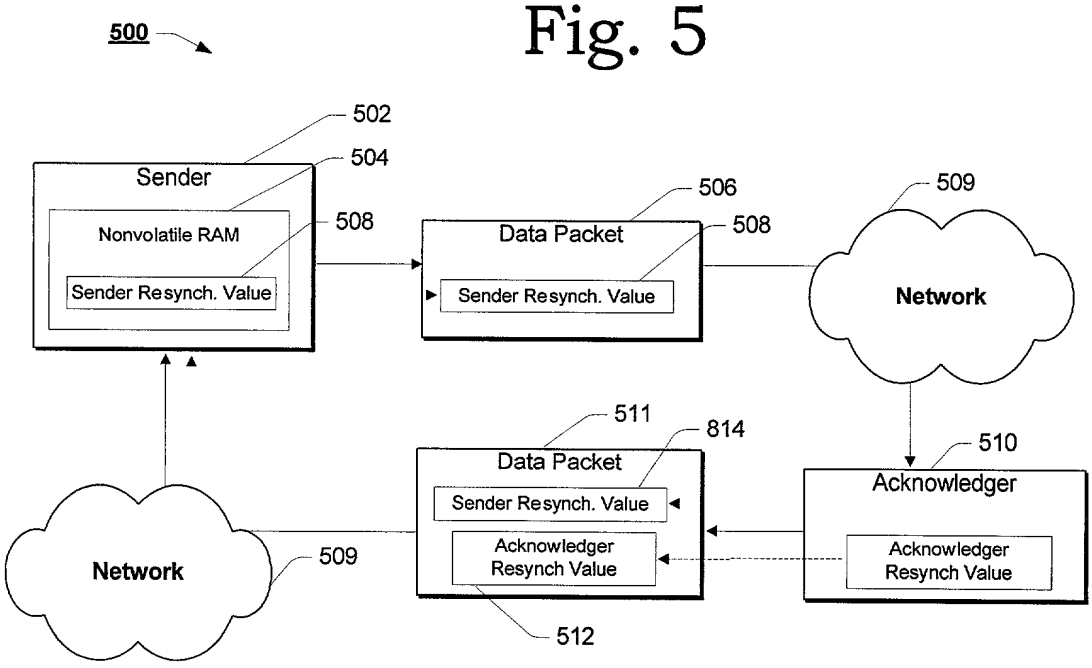

500
502
Sender
504
Nonvolatile RAM
508
Sender Resynch. Value
506
Data Packet
508
Sender Resynch. Value
509
Network
511
814
Data Packet
Sender Resynch. Value
Acknowledger Resynch Value
510
Acknowledger
Acknowledger Resynch Value
Network
509
512

Fig. 6

600

	Server RAM	Data Transfer	Client Volatile RAM	Client Nonvolatile RAM
602	Server Seq. # = 10 Client Seq. # =? Auth. Key = ?		Client Seq. # =40 Server Seq. # = ? Auth. Key = ?	Store R = Client Seq. # + 10 = 50
604	Server Seq. # = 10 Client Seq. # =? Auth. Key = 09F7	← Initiate Secured Communication →	Client Seq. # =40 Server Seq. # = ? Auth. Key = 09F7	R = 50 Auth. Key = 09F7
606	Server Seq. # = 10 Client Seq. # =? Auth. Key = 09F7	REQUEST (Server Sequence # = 10) →	Client Seq. # =40 Server Seq. # = 10 Auth. Key = 09F7	R = 50 Auth. Key = 09F7
608	Server Seq. # = 10 Client Seq. # =40 Auth. Key = 09F7	← REPLY (Client Sequence # = 40)	Client Seq. # =40 Server Seq. # = 10 Auth. Key = 09F7	R = 50 Auth. Key = 09F7
610	Server Seq. # = 11 Client Seq. # =40 Auth. Key = 09F7	REQUEST(Server Sequence # = 11) →	**Client Power Loss**	R = 50 Auth. Key = 09F7
612	Server Seq. # = 12 Client Seq. # =40 Auth. Key = 09F7	REQUEST (Server Sequence # = 12) →	**No Secure Connection**	R = 50 Auth. Key = 09F7
614	Server Seq. # = 12 Client Seq. # =50 Auth. Key = 09F7	← SYNC REQUEST (Client Seq.# = 50)	Client Seq. # =50 ← R = 50 Server Seq. # = ? Auth. Key = 09F7 ← Auth. Key = 09F7	
616	Server Seq. # = 13 Client Seq. # =50 Auth. Key = 09F7	ACKN (Serv Seq#=13)(Client Seq#=50) →	Client Seq. # =50 Server Seq. # = 13 Auth. Key = 09F7	Store R = 60 Auth. Key = 09F7
618	Server Seq. # = 14 Client Seq. # =50 Auth. Key = 09F7	REQUEST (Server Sequence # = 14) →	Client Seq. # =50 Server Seq. # = 14 Auth. Key = 09F7	R = 60 Auth. Key = 09F7
620	Server Seq. # = 14 Client Seq. # =51 Auth. Key = 09F7	← REPLY (Client Sequence # = 51)	Client Seq. # =51 Server Seq. # = 14 Auth. Key = 09F7	R = 60 Auth. Key = 09F7

Fig. 7

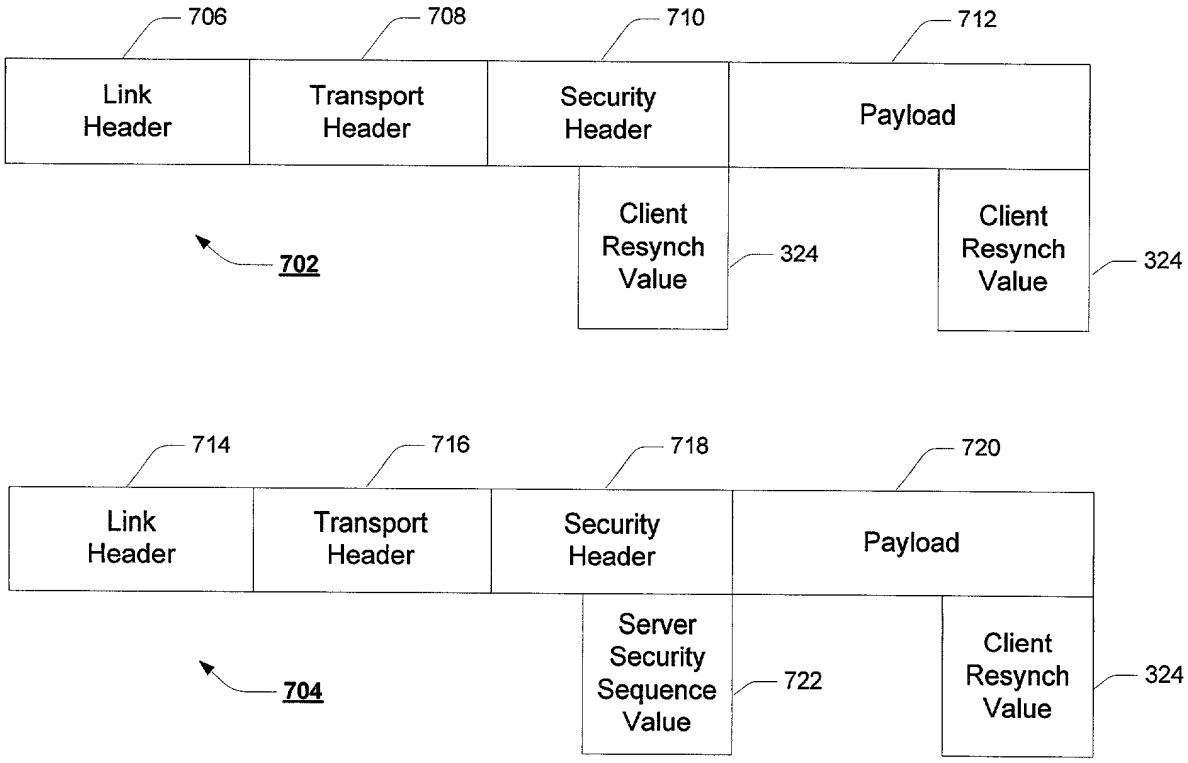
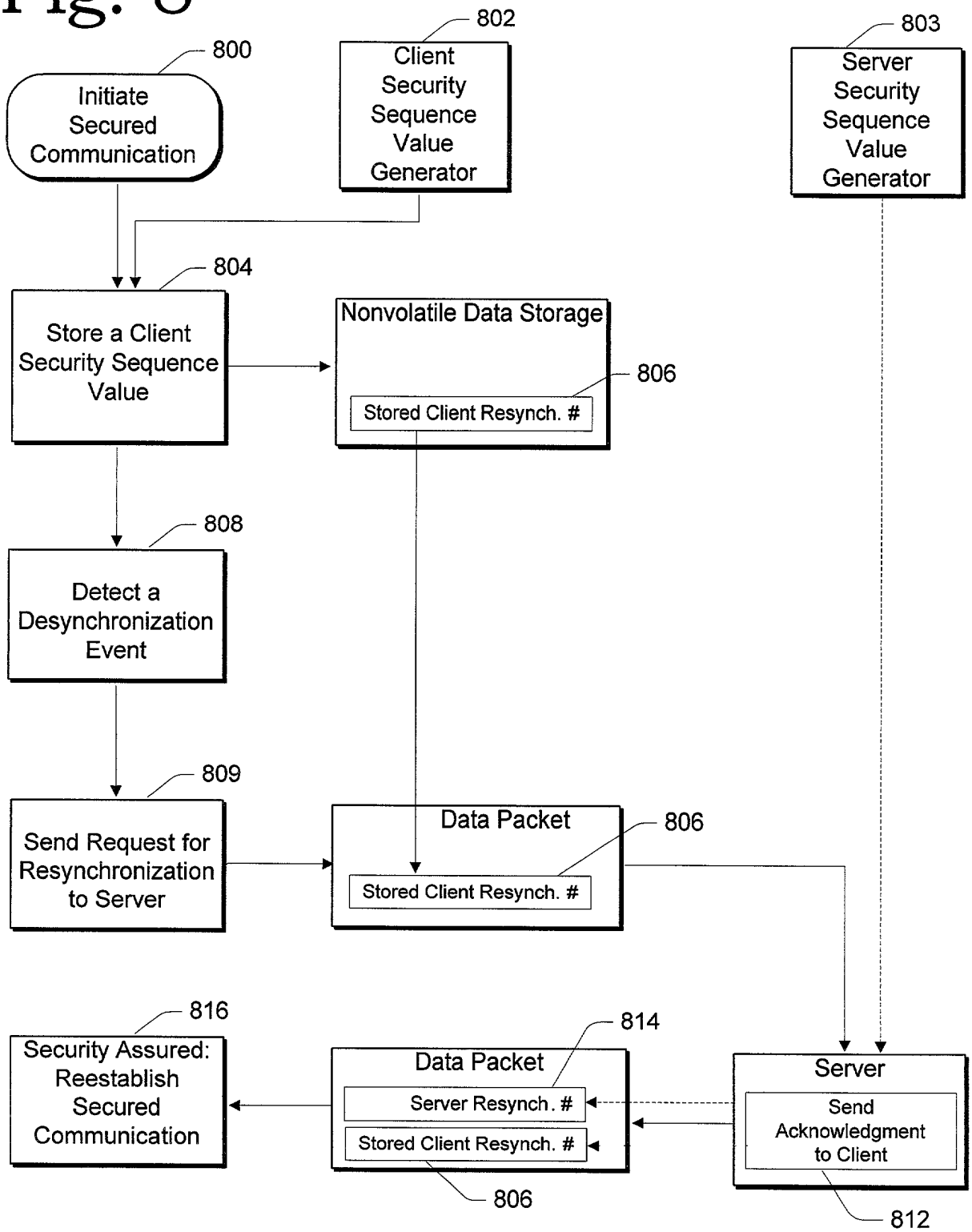

706
708
710
712
Link Header
Transport Header
Security Header
Payload
Client Resynch Value
324
Client Resynch Value
324
702
714
716
718
720
Link Header
Transport Header
Security Header
Payload
Server Security Sequence Value
722
Client Resynch Value
324
704

Fig. 8


800
Initiate Secured Communication
802
Client Security Sequence Value Generator
803
Server Security Sequence Value Generator
804
Store a Client Security Sequence Value
Nonvolatile Data Storage
Stored Client Resynch. #
806
808
Detect a Desynchronization Event
809
Send Request for Resynchronization to Server
Data Packet
Stored Client Resynch. #
806
816
Security Assured: Reestablish Secured Communication
814
Data Packet
Server Resynch. #
Stored Client Resynch. #
806
Server
Send Acknowledgment to Client
812

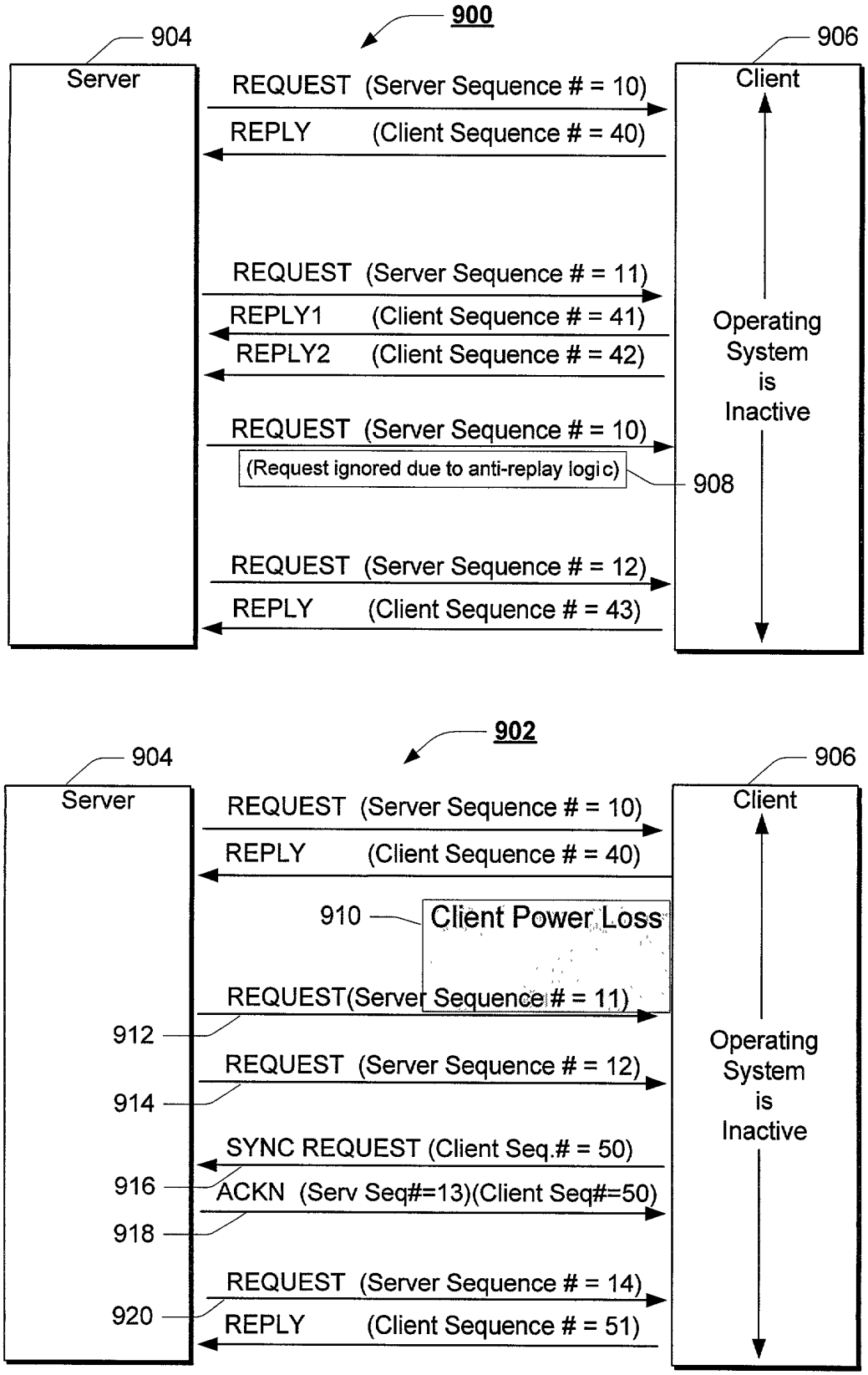

900
904
Server
906
Client
REQUEST (Server Sequence # = 10)
REPLY (Client Sequence # = 40)
REQUEST (Server Sequence # = 11)
REPLY1 (Client Sequence # = 41)
REPLY2 (Client Sequence # = 42)
Operating System is Inactive
REQUEST (Server Sequence # = 10)
(Request ignored due to anti-replay logic)
908
REQUEST (Server Sequence # = 12)
REPLY (Client Sequence # = 43)
902
904
Server
906
Client
REQUEST (Server Sequence # = 10)
REPLY (Client Sequence # = 40)
910
Client Power Loss
REQUEST(Server Sequence # = 11)
912
REQUEST (Server Sequence # = 12)
914
Operating System is Inactive
SYNC REQUEST (Client Seq.# = 50)
916
ACKN (Serv Seq#=13)(Client Seq#=50)
918
REQUEST (Server Sequence # = 14)
920
REPLY (Client Sequence # = 51)

Fig. 9